ABSTRACT

Multiple data and images are multiplexed and sequenced in order to minimize the recording and monitoring hardware required to process the images, providing a detailed record of an event, greatly enhancing event reconstruction efforts. The multi-media safety and surveillance system for aircraft incorporates a plurality of strategically spaced sensors including video imaging generators for monitoring critical components and critical areas of both the interior and the exterior of the aircraft. The captured data and images are recorded and may be transmitted to ground control stations for real time or near real time surveillance. The system includes a plurality of strategically located video image sensors such as, by way of example, analog and/or digital video cameras, a video data recorder (VDR) and a pilot display module (MCDU or MIDU). All data is in recorded in an IP format. The IP encoder may be an integral component of the VDR, or the data may be transmitted in an IP format from the data generator device. The VDR includes one or more non-volatile memory arrays for storing and processing the data. The VDR includes both wired and wireless network connectivity. The memory arrays are in a hardened hermetic assembly while other support electronics may be housed in a less rigorous assembly. An underwater beacon generator may be provided to assist in locating a downed VDR unit. The system is adapted for sending live signals directly to ground support via radio or satellite communications channels. The system also includes audio sensors and component monitoring sensor devices and can replace the CVR system where desired. The system is adapted for selectively transmitting all of the data on a near real time basis to a ground tracking station. The system also includes audio sensors and component monitoring sensor devices and can replace the CVR system where desired. The system is adapted to provide access to serial, synchronized full screen view of each of the cameras, in sequence, or alternatively to provide split screen viewing of a plurality of cameras.

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